

**Notice of Allowability**

Application No.

10/587,039

Applicant(s)

HOURAI ET AL.

Examiner

Felisa C. Hiteshew

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 11/20/2007.
2. ☒ The allowed claim(s) is/are 3-5, 7 and 8.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).


\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 09/05/2007
- ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- ☐ Notice of Informal Patent Application
- ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
- ☐ Examiner's Amendment/Comment
- ☒ Examiner's Statement of Reasons for Allowance
- ☐ Other \_\_\_\_\_

  
Felisa C. Hiteshew  
Primary Examiner  
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***Information Disclosure Statement***

The PTOL 1449 of 09/05/2007 has been received, reviewed and considered.

***Allowable Subject Matter***

1. Claims 3-5, 7 and 8 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art of record does not teach nor render obvious the instantly claimed invention. There is no teaching in the art to perform the processes that are now claimed. The prior art previously cited does not teach a method for growing silicon single crystals, comprising pulling a Silicon single crystal by the CZ method in a hydrogen-containing inert gas atmosphere so as to expand the range of the pull rate for the PI region at which a single crystal containing no COPs or dislocation clusters throughout the crystal in the radial direction having an interstitial rich region can be pulled, wherein the pulling of the silicon single crystal is conducted at a pull rate within an expanded range of the pull rate for the PI region so as to grow a grown-in defect-free silicon single crystal having a body portion that is an interstitial rich region, **and the composition of the hydrogen-containing inert gas atmosphere is set so that the hydrogen concentration  $V_H$  (vol%), air concentration  $V_{Air}$  (vol%) and argon concentration  $V_{Ar}$  (vol%), when indicated as points ( $V_H$ ,  $V_{Ar}$ ,  $V_{Air}$ ) in appended Fig. 12, are values which lie within a non-combustion range-enclosed by point A (100,0,0), point B (0,100,0), point C (0,0,100), point D (4,0,96), point E (4,84,12) and point F (75,0,25).** There is no motivation in the art to change the prior art's teaching of to arrive at the instantly claimed process.


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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Felisa Hiteshew whose telephone number is (571) 272-1463. The examiner can normally be reached on Mondays through Thursday from 5:30 AM to 4:00 PM with Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr, can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-1463.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866- 217-9197 (toll-free).

  
FELISA HITESHEW  
PRIMARY EXAMINER  
AU 1792